

AMENDMENT TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1 1. (Currently Amended) In a network device configured by a configuration command, a
2 A-method for ~~regenerating a~~ automatically re-constructing said configuration
3 command based on data stored in a configuration database during parsing and
4 processing of the configuration command by the network device, the method
5 comprising the steps of:
6 creating and storing a linear command regeneration template ~~including a~~ that includes
7 at least one linear node template in a memory, each linear node template
8 corresponding to a command element in said configuration command; and
9 ~~reconstructing~~ regenerating said configuration command using based on said linear
10 command regeneration template and based on data from a the configuration
11 database.
- 1 2. (Currently Amended) The method of Claim 1 wherein ~~said~~ the step of creating and
2 storing a linear command regeneration template further comprises:
3 storing a begin option node template in said at least one linear node template.
- 1 3. (Currently Amended) The method of Claim 1 wherein ~~said~~ the step of creating and
2 storing a linear command regeneration template further comprises:
3 storing a next option node template in said at least one linear node template.
- 1 4. (Currently Amended) The method of Claim 1 wherein ~~said~~ the step of creating and
2 storing a linear command regeneration template further comprises:
3 storing an end option node template in said at least one linear node template.
- 1 5. (Currently Amended) The method of Claim 1 wherein ~~said~~ the step of creating and
2 storing a linear command regeneration template further comprises:

3 storing a begin option node template, a next option node template, and an end option
4 node template in said at least one linear node template.

1 6. (Currently Amended) The method of Claim 1 wherein ~~said reconstructing the step of~~
2 regenerating said configuration command using said linear command regeneration
3 ~~template and data from a database~~ further comprises the step of:
4 filtering said linear command regeneration template to locate said at least one linear
5 node template.

1 7. (Currently Amended) The method of Claim ~~6~~ 1 wherein ~~said filtering said linear the~~
2 step of regenerating said configuration command regeneration template to locate said
3 ~~linear node template~~ further comprises the step of:
4 scanning said the linear command regeneration template to find a begin option node
5 template, said begin option node template including an identification.

1 8. (Cancelled)

1 9. (Currently Amended) The method of Claim ~~8~~ 7, wherein ~~said filtering said linear the~~
2 step of regenerating said configuration command regeneration template to locate said
3 ~~linear node template~~ further comprises the steps of :
4 scanning said the linear command regeneration template to find an end option node
5 template including that includes said identification of the begin option node template.

1 10. (Currently Amended) The method of Claim 6 wherein the step of regenerating said
2 configuration command further comprising comprises the step of:
3 passing said filtered linear node template from ~~said~~ the linear command regeneration
4 template to an evaluate branches process.

1 11. (Currently Amended) The method of Claim 10 further comprising the step of:
2 evaluating at least one branch in said filtered linear node template from ~~said~~ the linear
3 command regeneration template by said evaluate branches process.

- 1 12. (Currently Amended) The method of Claim 10 ~~wherein said evaluating at least one~~
2 ~~branch in said linear node from said linear command regeneration template~~ further
3 ~~comprises~~ comprising the step of:
4 finding a branch in said filtered linear node template.
- 1 13. (Currently Amended) The method of Claim ~~10~~ 12, ~~wherein said evaluating at least~~
2 ~~one branch in said linear node from said linear command regeneration template~~
3 further ~~comprises~~ comprising the step of:
4 validating said branch using said based on data from said configuration database.
- 1 14. (Currently Amended) A ~~memory~~ computer-readable medium carrying one or more
2 sequences of instructions ~~storing a method for regenerating automatically re-~~
3 constructing a network device configuration command that was used to configure a
4 network device based on data stored in a configuration database, wherein parsing and
5 processing of the configuration command by the network device resulted in storage of
6 data in the configuration database, and wherein execution of the sequences of
7 instructions by one or more processors causes said one more processors to carry out
8 the steps of, ~~said method comprising:~~
9 creating and storing a linear command regeneration template including a that includes
10 at least one linear node template in a memory, each linear node template
11 corresponding to a command element in said configuration command; and
12 ~~reconstructing~~ regenerating said configuration command using based on said linear
13 command regeneration template and based one data from a the configuration
14 database.
- 1 15. (Currently Amended) The ~~memory~~ medium of Claim 14 wherein said one or more
2 sequences of instructions for creating and storing a linear command regeneration
3 template further comprises one or more sequences of instructions for:
4 storing a begin option node template in said at least one linear node template.

- 1 16. (Currently Amended) The ~~memory~~ medium of Claim 14 wherein said one or more
2 sequences of instructions for creating and storing a linear command regeneration
3 template further comprises one or more sequences of instructions for:
4 storing a next option node template in said at least one linear node template.
- 1 17. (Currently Amended) The ~~memory~~ medium of Claim 14 wherein said one or more
2 sequences of instructions for creating and storing a linear command regeneration
3 template further comprises one or more sequences of instructions for:
4 storing an end option node template in said at least one linear node template.
- 1 18. (Currently Amended) The ~~memory~~ medium of Claim 14 wherein said one or more
2 sequences of instructions for creating and storing a linear command regeneration
3 template further comprises one or more sequences of instructions for:
4 storing a begin option node template, a next option node template, and an end option
5 node template in said at least one linear node template.
- 1 19. (Currently Amended) The ~~memory~~ medium of Claim 14 wherein said ~~reconstructing~~
2 one or more sequences of instructions for regenerating said configuration command
3 ~~using said linear command regeneration template and data from a database~~ further
4 comprises one or more sequences of instructions for:
5 filtering said linear command regeneration template to locate said at least one linear
6 node template.
- 1 20. (Currently Amended) The ~~memory~~ medium of Claim ~~19~~ 14 wherein said ~~filtering~~
2 ~~said linear~~ one or more sequences of instructions for regenerating said configuration
3 ~~command regeneration template to locate said linear node template~~ further comprises
4 one or more sequences of instructions for:
5 scanning said the linear command regeneration template to find a begin option node
6 template, said begin option node template including an identification.
- 1 21. (Cancelled)

- 1 22. (Currently Amended) The ~~memory medium~~ of Claim 21 20, wherein said ~~filtering~~
2 ~~said linear~~ one or more sequences of instructions for regenerating said configuration
3 ~~command regeneration template to locate said linear node template~~ further comprises
4 one or more sequences of instructions for:
5 scanning said ~~the~~ linear command regeneration template to find an end option node
6 template ~~including~~ that includes said identification of the begin option node template.
- 1 23. (Currently Amended) The ~~memory medium~~ of Claim 19 wherein the one or more
2 sequences of instructions for regenerating said configuration command further
3 ~~comprising~~ comprises one or more sequences of instructions for:
4 passing said filtered linear node template from said ~~the~~ linear command regeneration
5 template to an evaluate branches process.
- 1 24. (Currently Amended) The ~~memory medium~~ of Claim 23 further comprising one or
2 more sequences of instructions for:
3 evaluating at least one branch in said filtered linear node template from said ~~the~~ linear
4 command regeneration template by said evaluate branches process.
- 1 25. (Currently Amended) The ~~memory medium~~ of Claim 24 23 ~~wherein said evaluating~~
2 ~~at least one branch in said linear node from said linear command regeneration~~
3 ~~template~~ further ~~comprises~~ comprising one or more sequences of instructions for:
4 finding a branch in said filtered linear node template.
- 1 26. (Currently Amended) The ~~memory medium~~ of Claim 25 ~~wherein said evaluating at~~
2 ~~least one branch in said linear node from said linear command regeneration template~~
3 further ~~comprises~~ comprising one or more sequences of instructions for:
4 validating said branch ~~using said~~ based one data from said configuration database.
- 1 27-39 (Cancelled)

1 40. (Currently Amended) In a network device configured by a configuration command,
2 an apparatus A-structure for regenerating a automatically re-constructing said
3 configuration command based on data stored in a configuration database during
4 parsing and processing of the configuration command by the network device, the
5 apparatus comprising:
6 means for creating and storing a linear command regeneration template ~~including a~~
7 that includes at least one linear node template in a memory, each linear node template
8 corresponding to a command element in said configuration command; and
9 means for ~~reconstructing~~ regenerating said configuration command using based on
10 said linear command regeneration template and based on data from ~~a the~~
11 configuration database.

1 41. (Currently Amended) The ~~structure~~ apparatus of Claim 40 wherein said means for
2 creating and storing a linear command regeneration template further comprises:
3 means for storing a begin option node template in said at least one linear node
4 template.

1 42. (Currently Amended) The ~~structure~~ apparatus of Claim ~~41~~ 40 wherein said means for
2 creating and storing a linear command regeneration template further comprises:
3 means for storing a next option node template in said at least one linear node
4 template.

1 43. (Currently Amended) The ~~structure~~ apparatus of Claim 40 wherein said means for
2 creating and storing a linear command regeneration template further comprises:
3 means for storing an end option node template in said at least one linear node
4 template.

1 44. (Currently Amended) The ~~structure~~ apparatus of Claim 40 wherein said means for
2 creating and storing a linear command regeneration template further comprises:

3 means for storing a begin option node template, a next option node template, and an
4 end option node template in said at least one linear node template.

1 45. (Currently Amended) The ~~structure~~ apparatus of Claim 40 wherein said means for
2 ~~reconstructing~~ regenerating said configuration command ~~using said linear command~~
3 ~~regeneration template and data from a database~~ further comprises:
4 means for filtering said linear command regeneration template to locate ~~said~~ at least
5 one linear node template.

1 46. (Currently Amended) The ~~structure~~ apparatus of Claim 45 wherein said means for
2 filtering said linear command regeneration template to locate ~~said linear node~~
3 ~~template further~~ comprises:
4 means for scanning said linear command regeneration template to find a begin option
5 node template, said begin option node template including an identification.

1 47. (New) A method of automatically re-constructing a network device configuration
2 command based on configuration data stored in the network device, wherein parsing
3 and processing of the configuration command resulted in storage of the configuration
4 data, wherein the command comprises at least one command element that can have a
5 plurality of values, the method comprising the computer-implemented steps of:
6 creating and storing at least one linear node in a parse tree for representing said at
7 least one command element, wherein said linear node comprises a begin
8 option node having a single entrance; a next option node coupled to said being
9 option node having a single entrance; and an end option node coupled to said
10 being option node wherein said end option node has a single exit;
11 creating and storing a linear command regeneration template in a memory, wherein
12 the linear command regeneration template comprises information identifying
13 how to regenerate a command; and
14 regenerating the command based on the linear command regeneration template and
15 based on data from said configuration data stored in the network device.

- 1 48. (New) The method of Claim 47, wherein creating and storing at least one linear node
2 further comprises connecting a plurality of branches to said begin option node.
- 1 49. (New) The method of claim 48 wherein each branch in said plurality of branches
2 represents a different value of said at least one command element.
- 1 50. (New) The method of claim 48, wherein each branch is associated with a next option
2 node.
- 1 51. (New) The method of claim 47, wherein said parse tree further comprises a binary
2 node.
- 1 52. (New) The method of claim 47, wherein said command includes another command
2 element that can have a plurality of values, said method further comprising
3 representing said another command element by another linear node in said parse tree
4 wherein said another linear node comprises a second being option node having a
5 single entrance connected to said exit of said end option node, a second next option
6 node coupled to said another begin option node, and a second end option node
7 coupled to said another begin option node wherein said another end option node has a
8 single exit.
- 1 53. (New) A method of automatically regenerating a network device configuration
2 command based on configuration data stored in the network device, wherein parsing
3 and processing of the configuration command resulted in storage of the configuration
4 data, the method comprising the computer-implemented steps of:
5 creating and storing a linear command regeneration template including a linear node
6 template, wherein the linear node template comprises a begin option node
7 template, a next option node template, and an end option node template;
8 regenerating the configuration command based on the linear command regeneration
9 template and based on data from a database, by:

10 scanning the linear command regeneration template to find an end option node
11 template that includes an identification of the begin option node template;
12 passing the linear node template from the linear command regeneration template to an
13 evaluate branches process;
14 evaluating at least one branch in the linear node template from the linear command
15 regeneration template by the evaluate branches process;
16 finding a branch in the linear node template; and
17 validating the branch using the configuration data stored in the network device.